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# (54) Slatted mount and hook assembly

(57) In a slatted mount and hook assembly of the kind having a plurality of slats (A, B) between which at least one substantially L-shaped locating groove (15, 15') is defined for releasable engagement by a complementally shaped attachment part of a hook (16), at least one or the other of the locating groove of the mount and the attachment part of the hook has a formation (12) which causes a frictional interengagement between the mount and the attachment part of the hook, at or adjacent to the angle of the L-shape of the groove, as the attachment part is manoeuvered into the groove. The formation acts as a means of restraint to subsequent withdrawal of the hook from the groove. The mount may have an insert (24) in which the locating groove (15') is defined.

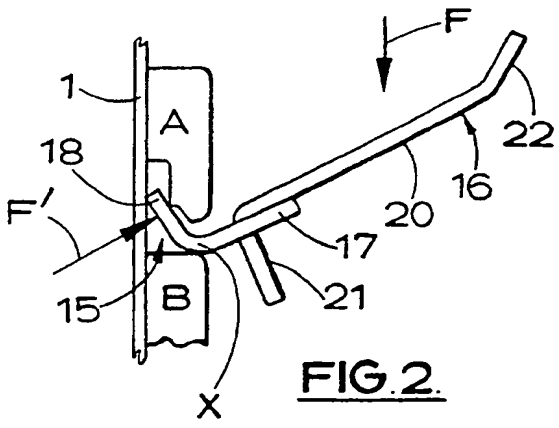


FIG.2.

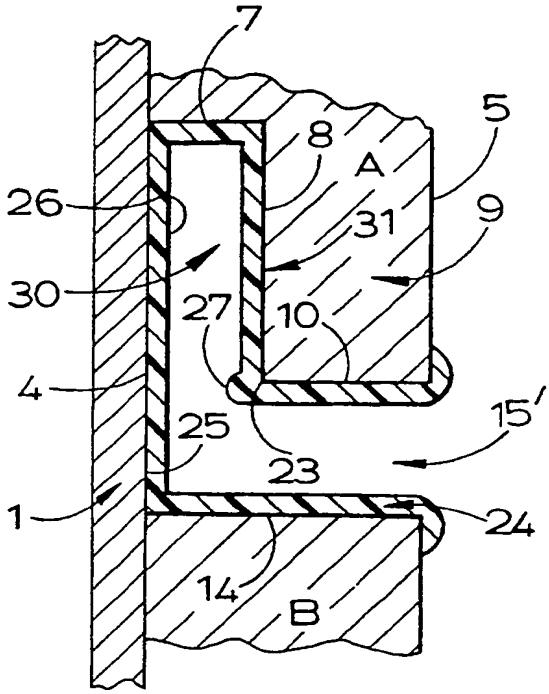


FIG.5.

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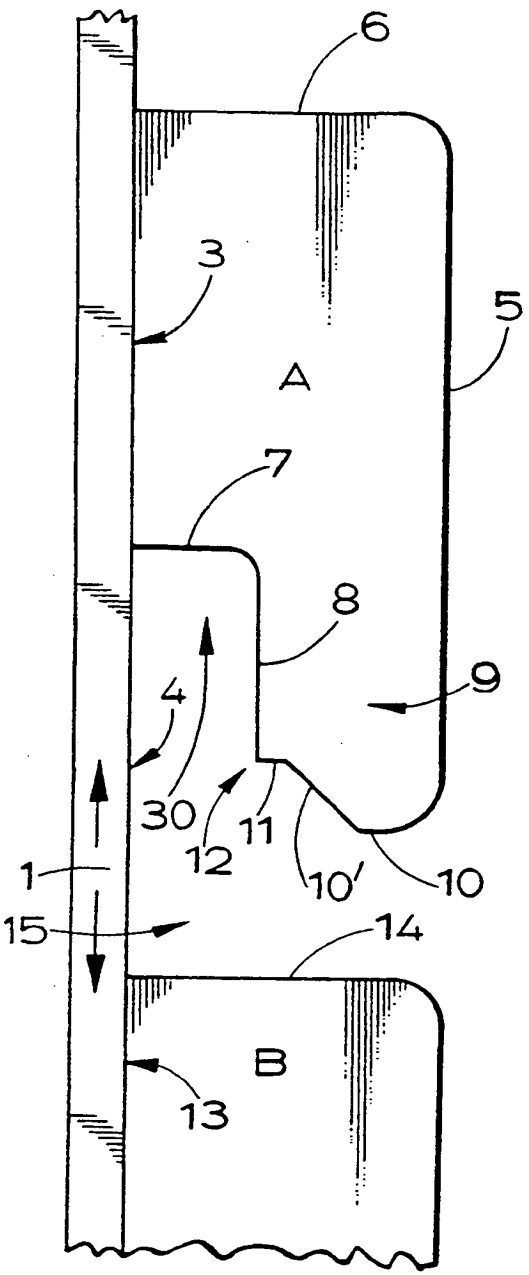


FIG.1

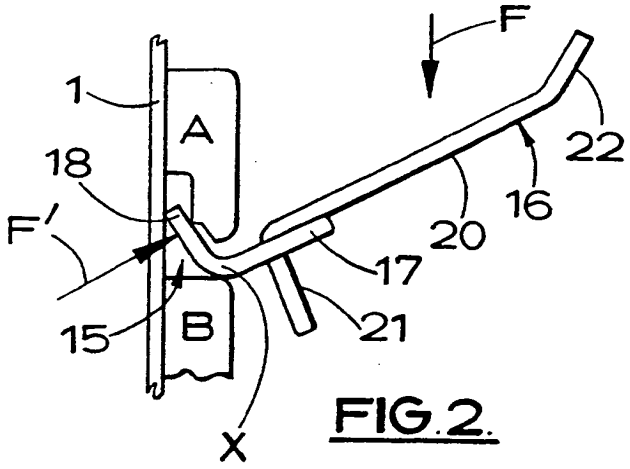


FIG.2

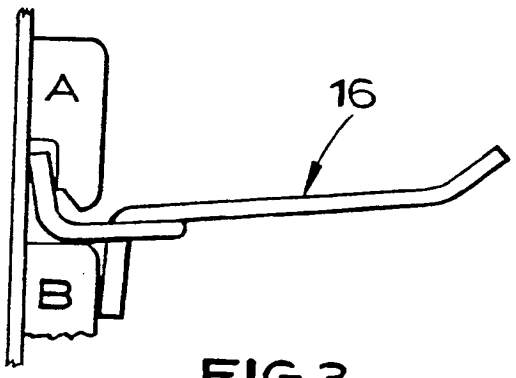


FIG.3

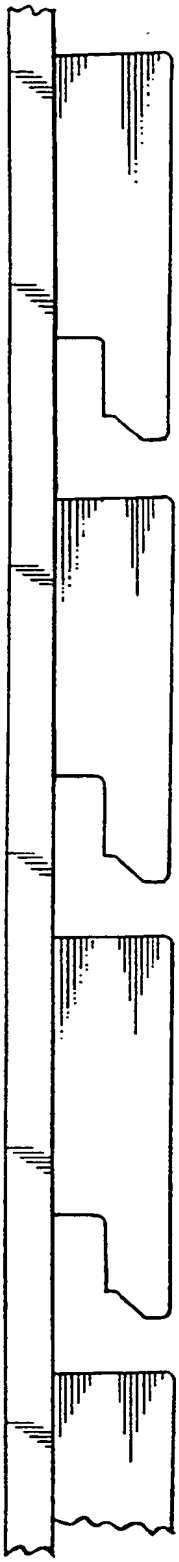

FIG.4.

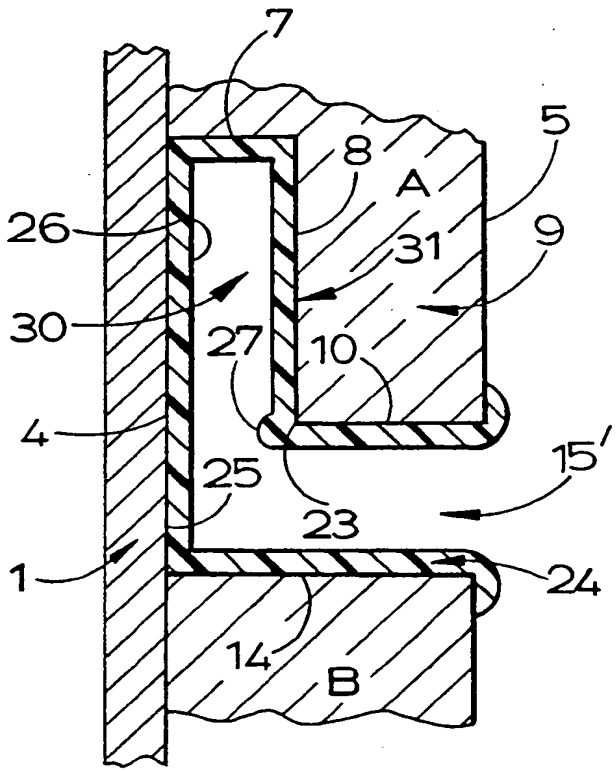


FIG.5.

# SLATTED MOUNT AND HOOK ASSEMBLY

This invention relates to a slatted mount and hook assembly of the kind in which a mount for storage or display purposes comprises a plurality of slats between which at least one substantially L-shaped locating groove is defined in which is releasably engaged a complementally shaped attachment part of a hook adapted for supporting an article on the mount to be stored or displayed, the engagement of the attachment part in the locating groove retaining the hook on the mount. Such a slatted mount and hook assembly is hereinafter referred to as "of the kind described".

A slatted mount and hook assembly of the kind described may be used, for example, for displaying articles in the field of haberdashery retailing where cards or packets containing buttons, ribbons, threads and such may be suspended from the hook, or a number of hooks, located on the mount.

It is usual for the hook to project substantially perpendicularly from the mount in its position of use for supporting an article, or articles, but it has to be tilted relative to the mount in order to manoeuvre its attachment part into and out of engagement with the locating groove. Commonly the mount is disposed substantially vertically, the hook extends substantially horizontally from the mount in its position of use and the hook has to be tilted upwards relative to the mount for the attachment part to be engaged in and released from the locating groove.

A problem commonly experienced with a slatted mount and hook assembly of the kind described is that when the hook is in its position of use on the mount

there is very low resistance to any force on the hook which may be exerted on it, accidentally or otherwise, such as may tend to tilt it relative to the mount and cause its attachment part to be released from the locating groove. This is particularly inconvenient when articles are being displayed for retail as an appreciable time may be wasted in re-mounting the hook and restoring the articles to the required display presentation each time they are disturbed.

An aim of the present invention is to provide a slatted mount and hook assembly of the kind described in which the hook can be supported more securely on the mount.

According to the present invention a slatted mount and hook assembly of the kind described is provided in which at least one or the other of the locating groove of the mount and the attachment part of the hook has a formation which causes a frictional interengagement between the mount and the attachment part at or adjacent to the angle of the L-shape of the groove as the attachment part is manoeuvred into the groove, thereby to present a means of restraint to subsequent withdrawal of the attachment part from the groove.

Preferably the frictional interengagement is such as to cause some distortion of the locating groove at or adjacent to the angle of the L-shape of the groove. When the attachment part has been manoeuvred into its fully engaged position in the groove the hook may be moved along the groove to displace it from the distorted region of the groove. This may serve to increase further the restraint to subsequent withdrawal of the attachment part from the groove.

Conveniently the formation is provided in the locating groove by a restricting proturberance at or near the inside of the angle of the L-shape.

The slats may be separate slat members fixed in spaced relationship, for example on a board, and shaped to define the L-shaped groove between them. Alternatively they may possibly be slat-shaped formations integrally defined on a board or other suitable support. The L-shaped groove may be formed in the board or support and serve to define the slat-shaped formations.

In one form the slatted mount may comprise a flat back board and at least two slats fixed or integrally joined to the flat back board. At least one of the slats may have parallel rectangular front and back faces, the back face being of smaller area than the front face and being fixed or integrally joined to a front face of the flat back board. These front and back faces may be joined along one side by a perpendicular face, and along the opposite side in such a manner as to form a ledge which overhangs the front face of the flat back board, thus forming a gap between an underside of the ledge and the flat back board. The ledge may be formed such that the front surface of the slat is joined to a perpendicular surface which, when the slatted mount is disposed substantially vertically, extends a short way along the horizontal towards the flat back board before slanting upwardly towards the vertical, thus forming a sloped face across the width of the ledge. Just before it meets a lower face of the ledge, this slanted face may meet a substantially horizontal face which lies between and perpendicular to the front and back faces of the ledge. The corner at which this horizontal face meets the lower face of the

ledge thus forms a friction-bearing lip on the underside of the ledge. The second slat may be of similar shape and form to the first, or may be of substantially rectangular cross section, and be positioned directly below the first slat in such a way as to form a gap between the two slats which, together with the gap between the underside of the ledge and the back board, defines the locating groove of the mount of substantially L-shaped cross section.

The hook may be of a known type, commonly used for affixing to a peg board, comprising one long finger which may be bent to form a hook at one end, and which is bent at right angles to form a prong at the other end. The finger is joined to a U-shaped bar which forms the attachment part of the hook and comprises a prong integrally joined to each of its ends, these prongs extending perpendicularly to the U-shaped bar in such a manner that the prong integral with the long finger is positioned between the arms of the U-shaped bar, and such that this prong is parallel to but extends in the opposite direction to, the two prongs of the U-shaped bar.

Using a hook of this form it is located on the slatted mount by placing the two prongs of the U-shaped bar into the L-shaped groove. When the slatted mount is of the form described in which a friction-bearing lip is presented by one of a pair of slats each prong rests against the friction bearing lip of the overhanging ledge of the first slat and the top of each prong rests against the flat back board, while the base of each prong, where it is joined to the U-shaped bar, bears against the top surface of the second slat. By applying a force on the long finger of the hook such as to tilt the hook downwards, the prongs of the U-shaped

bar are forced to bite into the friction-bearing lip of the overhanging ledge. The prongs continue to deform the lip until the deformation is such that it allows the prongs to enter fully into the L-shaped groove, so that the prong formed at the end of the long finger of the hook rests parallel to the front face of the lower slat, and the long finger extends substantially perpendicularly to the front faces of the two slats.

With the slatted mount disposed substantially vertically, the hook is thus installed in the L-shaped groove between the slats so that it extends substantially horizontally from the mount. Applying a force to the long finger of the hook such as to tilt it downwards causes the prong at the end of the long finger to bear against the front face of the upper slat. Applying a moderate force to the long finger such as to tilt the hook upwards, causes each prong on the U-shaped bar to bear against the friction bearing lip of the ledge and the tip of each prong to bear against the front face of the flat back board, but does not dislodge the hook from the L-shaped groove. Only if a relatively large force is purposely applied in a substantially upward direction, will the hook eventually be forced out of the groove. Thus the arrangement provides a stable mount for the hook, providing the mounted hook with considerable resistance to upward (or downward) forces. Additional resistance may be provided if the hook is displaced sideways in the groove, after full insertion of the hook in the groove, so that the prongs are no longer positioned at the deformations in the friction-bearing lip which were formed when the hook was fully inserted in the groove.

In a preferred construction, the slats are fabricated from medium density fibre board, which

possesses deformation characteristics particularly suitable for the friction bearing lip of the overhanging ledge of the upper slat described. Alternatively, the flat back board and the slats may be formed integrally from one piece of medium density fibre board.

In an alternative embodiment of the invention, the ledge formed by the front and back faces of at least one of the slats is formed such that the front surface of the slat is joined to a perpendicular surface which, when the slatted mount is disposed substantially vertically, extends substantially along the horizontal until it meets a lower face of the ledge which is substantially parallel to the front and back faces of the slat. With a second slat of similar shape and form to the first, or of substantially rectangular cross section, positioned directly below the first slat, a gap is formed between the two slats which, together with the gap between the under side of the ledge and the back board, defines a substantially L-shaped groove in the mount. Within this groove there may be positioned an insert which may be in the form of a relatively thin sheet of material shaped to match the contour defined by the end cross-section of the substantially L-shaped groove. With the insert in position within the groove, all, or at least a part of some or each of, the surfaces of the mount which define the groove are covered by the insert, such that an outer surface of the insert defines a substantially L-shaped locating groove within the groove defined in the mount by the surfaces of the mount.

The insert may include a restricting protuberance which may be integrally formed on the insert. When the insert is located within the groove in the

aforementioned manner, the restricting protuberance is preferably located at or near the inside of the angle of the L-shape of the locating groove so as to form a friction-bearing lip on the underside of the ledge of the upper slat of the mount. The friction-bearing lip may be deformed during manoeuvring of the attachment part of the hook into the locating groove, in a similar manner as in the first-described embodiment of the invention. Similarly, the friction-bearing lip acts as a means of restraint to subsequent withdrawal of the attachment part of the hook from the locating groove defined by the outer surface of the insert.

The insert may be made of metal, or a plastics material, having the necessary deformation characteristics for the integral friction-bearing lip.

The substantially L-shaped locating groove of the mount of either embodiment may be part of a substantially T-shaped groove, or a part of a groove of any other preferred shape, having a substantially L-shaped portion to receive the attachment part of the hook.

The hook may be of a different form from that particularly described. It may, for example, have the attachment part formed from metal sheet or plastics material, shaped to form substantially a right angle. The attachment part of a hook of this form may have at least one formation which causes the frictional interengagement between the mount and the attachment part of the hook as the attachment part is manoeuvred into the groove.

There now follows a detailed description, to be read with reference to the accompanying drawings, of a

slatted mount and hook assembly which illustrates the invention by way of example.

Figure 1 is a side view of a slatted mount, according to the invention;

Figure 2 is a side view of the mount showing a hook being inserted into the mount;

Figure 3 is a side view of the mount showing a hook being installed in the mount;

Figure 4 is a side view of a slatted mount incorporating a series of L-shaped locating grooves, and

Figure 5 is a partly sectional side view of an alternative slatted mount according to the invention.

A slatted mount is constituted by an assembly of a flat back board 1 and at least two slats A,B as shown in Figure 1.

The slat A comprises a rectangular back face 3, and a substantially rectangular front face 5 which is parallel to the back face 3. The back face 3 is parallel to, and in contact with, a front face 4 of the flat back board 1. The front face 5 and back face 3 are joined along one side by a substantially horizontal top face 6 which is perpendicular to faces 3 and 5, faces 3,5 and 6 thus forming a generally C-shaped cross section. The area of the front face 5 is greater than the area of the back face 3 which is joined at right angles to a substantially horizontal face 7, parallel to face 6.

The face 7 extends from the back face 3 of slat A, towards the front face 5 of slat A, but only extends part of the distance between the two faces, being joined to a substantially vertical face 8 therebetween which is perpendicular to face 7 and parallel to face 5. Face 8 extends away from faces 6 and 7, thus forming an underside of a ledge 9 which overhangs the flat back board 1. Front face 5 is joined along its lower edge to a substantially horizontal lower face 10 which is perpendicular to front face 5 and parallel to top face 6. Lower face 10 extends part of the way from front face 5 to face 8 before joining an angled face 10' which slants inwardly towards face 7 at approximately 45° to the vertical, until it meets a substantially horizontal face 11 which extends perpendicularly from face 8, towards front face 5. The perpendicular faces 8 and 11 form a sharp corner where they meet, thus forming a friction-bearing lip 12 on the inside of the overhanging ledge 9 formed by faces 5,8,10, 10' and 11.

The slat B may be of similar form to slat A or may be of a generally rectangular end cross section. Slat B is positioned directly below slat A, such that a back face 13 of slat B is in contact with the flat front face 4 of the flat back board 1, and such that a substantially horizontal top face 14 of slat B, which corresponds to the top face 6 of slat A, is positioned a short distance below slat A. Thus, a gap exists between slats A and B which, together with the gap between the underside of the ledge 9 and the back board 1, forms a locating groove 15 in the mount of substantially L-shaped end cross section.

A hook 16, of a known type commonly used for affixing to a peg board, comprises one long finger 20,

as shown in Figure 2, having a hooked outer end 22, and being joined near its other, inner, end to a U-shaped bar 17 which forms an attachment part of the hook and which is perpendicular to the finger 20. The U-shaped bar 17 comprises two prongs 18, one at each of its ends, which are perpendicular to both the bar 17 and the finger 20, a foot X of each prong being joined to the U-shaped bar 17. A third prong 21 is integrally joined to the finger 20, that prong 21 also being perpendicular to both finger 20 and prongs 18 and extending downwardly from the finger 20, between the arms of the U-shaped bar 17.

The hook 16 is located on the slatted mount by placing the two prongs 18 into the locating groove 15 such that the prongs 18 rest against the friction-bearing lip 12 formed by faces 11 and 8 of slat A, with the tip of each prong resting against the front face 4 of the flat back board 1, and such that the foot X of each prong, where it joins the U-shaped bar 17, rests against top face 14 of slat B, as shown in Figure 2. The dimensions of the slats A and B, and thus the locating groove 15, and the dimensions of the hook 16, are such that in order to insert the hook fully into the locating groove, a force F must be exerted on the finger 20, the force F pushing the finger 20 downwards towards slat B. The hook 16 acts as a lever to produce a force F' which pushes the prongs 18 into the friction-bearing lip 12. The lip 12 is deformed by the prongs until the deformation is such that the prongs 18 slide into a cavity 30 of the locating groove, the cavity 30 being formed by faces 7 and 8 of slat A and the front surface 4 of the flat back board 1. The prongs 18 are thus trapped inside the locating groove. With the hook 16 thus located, prong 21 is parallel to, and may rest against, front

face 5 of slat A, and feet X of prongs 18 are supported by top face 14 of slat B. If a force is applied to finger 20 in a downward direction, the prong 21 bears against front face 5 of slat B. If a moderate force is applied to finger 20 such as to tilt the hook relative to the mount, in an upward direction, the tips of prongs 18 bear against front face 4 of the flat back board 1 with the prongs 18 also bearing against the friction-bearing lip 12. Prongs 18 cannot escape from cavity 30 until a relatively large force is applied to finger 20 in a generally upward direction. Additionally, if after the hook 16 was been forced into the cavity 30, the hook is displaced sideways such that the prongs 18 are displaced from the regions where the lip was deformed by the prongs as they entered the cavity 30, the hook becomes even more resistant to any upward force exerted on the finger 20 as the undeformed regions of the lip further restrain the attachment part of the hook against withdrawal. An even greater force will be required to remove the hook than the force required if the hook had remained in its entry position with the prongs 18 positioned at the deformations in the lip, created by the prongs entering into the cavity 30.

The invention therefore provides a much more securely mounted hook than previously known arrangements. The slatted mount and hook assembly eliminates the need to use more complicated hooks which must be specially designed to overcome the problem of low resistance to upward forces. Thus, the costs involved in manufacture and supply of the assembly can be appreciably reduced.

A preferred embodiment of the invention is illustrated in Figure 4, in which the slatted mount

comprises several slats arranged to create a series of L-shaped locating grooves similar to the locating groove 15 shown in Figure 1.

Preferably all the slats are fabricated from medium density fibre board which possesses deformation characteristics particularly suitable for the friction-bearing lip 12 of the slats. Alternatively, the flat back board and the slats may be formed integrally from one piece of medium density fibre board.

The hook 16 is preferably made of metal.

In a further embodiment of the invention, face 11 of slat A is at an angle to the vertical such that face 11 is inclined inwardly towards front surface 5 of slat A.

An alternative embodiment of the invention is illustrated in Figure 5, where the substantially horizontal lower face 10 of the slat A extends from the front face 5 of the slat, towards the substantially vertical face 8 which forms the underside of the ledge 9, until it meets the face 8, thereby forming a corner 23 at the inside of the angle of the substantially L-shaped end cross-section of a groove 31 formed by faces 4, 7, 8, 10 and 14 of the slats A and B. An insert 24 is located within the groove 31. The insert is formed from a sheet of metal or plastics material which is shaped to correspond to the contour of the groove 31 so that with the insert located within the groove, all of the faces 4, 7, 8, 10 and 14, which define the groove 31, are covered by an outer surface 25 of the insert 24, as shown in Figure 5. An inner surface 26 of the insert 24, parallel and opposite to the surface 25, defines a substantially

L-shaped locating groove 15' in the insert within the substantially L-shaped groove 31 defined between the slats A and B. The insert may be glued or fixed within the groove 15 in any suitable manner, and may extend along the full length of the slats A and B of the mount, or only a part of that length. The insert 24 further comprises a restricting protuberance 27 which is located at the inside of the portion of the insert 24 which covers the corner 23 of the ledge 9. The protuberance 27 protrudes into the locating groove 15' of the insert. It is integrally formed in the insert 24 and acts as a friction-bearing lip on the inside of the overhanging ledge 9 of the slat A. The metal or plastics material of the insert has deformation characteristics which enable the protuberance 27 to be deformed under a force F' acting on the friction-bearing lip through the prongs 18 of the hook 16 as the hook is inserted into the locating groove 15', in a similar manner as the friction-bearing lip 12 is deformed during insertion of the hook 16 into the locating groove 15 of the slatted mount of the first embodiment, as illustrated in Figure 2. Once the prongs 18 of the hook 16 have been fully inserted into the locating groove 15', they cannot then escape from the cavity 30 until a relatively large force is applied to finger 20 of the hook, in a generally upward direction.

CLAIMS

1. A slatted mount and hook assembly comprising a plurality of slats between which at least one substantially L-shaped locating groove is defined in which is releasably engaged a complementally shaped attachment part of a hook adapted for supporting an article on the mount, in which at least one or the other of the locating groove of the mount and the attachment part of the hook has a formation which causes a frictional interengagement between the mount and the attachment part of the hook at or adjacent to the angle of the L-shape of the groove as the attachment part is manoeuvred into the groove, thereby to present a means of restraint to subsequent withdrawal of the attachment part from the groove.

2. A slatted mount and hook assembly according to claim 1, wherein the locating groove is adapted to be distorted at or adjacent to the angle of the L-shape of the groove, by the frictional interengagement.

3. A slatted mount and hook assembly according to claim 1 or claim 2, wherein the formation is provided in the locating groove by a restricting protuberance at or adjacent to the inside of the angle of the L-shape of the groove.

4. A slatted mount and hook assembly according to claim 3, wherein the restricting protuberance is of a material which is deformed as a result of the frictional interengagement between the mount and the attachment part of the hook during manoeuvring of the attachment part of the hook into the locating groove.

5. A slatted mount and hook assembly according to claim 4, wherein the attachment part of the hook is movable, in a fully engaged position within the locating groove, along the groove, away from the distorted region of the groove created during manoeuvring of the attachment part into its fully engaged position, in order to increase further the restraint to subsequent withdrawal of the attachment part from the groove.

6. A slatted mount and hook assembly according to any of claims 3, 4 and 5, wherein the locating groove is defined between at least two slats, and a portion of one of the slats comprises the restricting protuberance.

7. A slatted mount and hook assembly according to claim 6, wherein the restricting protuberance is integrally formed on one of the slats.

8. A slatted mount and hook assembly according to claim 7, wherein at least the slat having the portion comprising the restricting protuberance is made of medium density fibre board.

9. A slatted mount and hook assembly according to any of claims 1 to 5, wherein the locating groove is defined in an insert which is positioned within the mount.

10. A slatted mount and hook assembly according to claim 9, wherein the insert is shaped to correspond to the contour of a groove defined between slats of the mount, being fixed within the groove such that outer surfaces of the insert cover the faces of the mount which define the groove, and has inner surfaces which

define the substantially L-shaped locating groove between the slats of the mount.

11. A slatted mount and hook assembly according to claim 10 as dependent from claim 3, wherein a portion of the insert comprises the restricting protuberance located at or adjacent to the inside of the angle of the substantially L-shaped locating groove.

12. A slatted mount and hook assembly according to claim 11, wherein the restricting protuberance is integrally formed on the insert, and the insert is of a material having deformation characteristics which cause the restricting protuberance to be deformed as a result of the frictional interengagement between the mount and the attachment part of the hook during manoeuvring of the attachment part of the hook into the locating groove.

13. A slatted mount and hook assembly according to any preceding claim, wherein the hook comprises a U-shaped bar having a prong integrally joined to each of the ends of the U-shaped bar and extending perpendicularly to the U-shaped bar, each prong being adapted to bite into the formation as the attachment part of the hook is manoeuvred into the locating groove.

14. A slatted mount and hook assembly according to any preceding claim, wherein the slats are separate slats fixed in spaced relationship on a flat back board.

15. A slatted mount and hook assembly according to any of claims 1 to 14, wherein the slats are slat-shaped formations integrally defined in a board.

16. A slatted mount and hook assembly according to any preceding claim, wherein the substantially L-shaped locating groove is part of a substantially T-shaped groove.

17. A slatted mount and hook assembly substantially as described herein with reference to and as illustrated in Figures 1 to 4 of the accompanying drawings.

18. A slatted mount and hook assembly substantially as described herein with reference to and as illustrated in Figure 5 of the accompaying drawings.

| Patents Act 1977<br>Examiner's report to the Comptroller under Section 17<br>(The Search report) -18- | Application number<br>GB 9411119.2 |
|---|---|
| **Relevant Technical Fields**<br>(i) UK Cl (Ed.M) A4B<br>(ii) Int Cl (Ed.5) A47F 5/00, 5/01, 5/08 | Search Examiner<br>JOHN WILSON<br>Date of completion of Search<br>15 SEPTEMBER 1994 |
| **Databases** (see below)<br>(i) UK Patent Office collections of GB, EP, WO and US patent specifications.<br>(ii) | Documents considered relevant following a search in respect of Claims :-<br>1-18 |

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